



County of Santa Clara Emergency Medical Services Agency

EMS Communications System 2004/2005 Enhancement Plan

DRAFT 1.3
System Wide Review
March 19, 2004 – May 1, 2004

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COUNTY OF SANTA CLARA
EMS COMMUNICATIONS SYSTEM
2004/2005 ENHANCEMENT PLAN

~ Draft 1.3~

Mission

Enhance the operations of the Santa Clara County EMS Communications System through the addition of technology, revision of operational practices, implementation of policy, and adoption of standardized incident management practices related to prehospital communications.

Objectives

- Integrate ICS and FIREScope communications standards including the use of plain language, standardized terminology, and incident communication practices.
- Decrease non-essential radio traffic including ambulance move-ups, contractor corporate traffic, dispatcher-initiated hospital ring-downs, etc.
- Decrease 911 System ambulance response times by decreasing data transmissions on shared use voice transmission frequencies.
- Ensure radio communications between all Santa Clara County prehospital care providers including non-contracted and fire service units for incident and daily communications details.
- Establish operational standards for use in large-scale events that may affect the Santa Clara County Emergency Medical Services System.
- Identify operational practices related to the use of the Bay Area Mutual Aid Communications System (BAYMACS) for EMS command and control functions.
- Identify funding mechanisms to assist in covering costs associated with enhancement of the EMS Communications System.

Frequency Utilization

Frequency 9 (UHF - 400 Band)

This frequency to be transitioned from a non-911 system provider hospital ring-down channel to a radio-alerting channel for all units in the County. All non-emergency hospital notifications will occur via cellular phone. Unit initiated hospital ring-downs are discussed later in this document.

911 System units will receive call-alerts via radio pager. All other notification methods merely supplement this notification. No voice communications will be used on this channel. Upon receipt of a page, the unit shall immediately transmit (on Frequency 91) their unit number, location, and be prepared to copy call information. One portable radio will also receive a ring-down after the Frequency 9 page has been sent (sent on Frequency 91). Units may not turn off their radio pager at any time and must maintain a redundant form of communications in the "on" position at all times (includes portable radio, cellular phone, landlines). Alphanumeric pages will continue but will be sent at the time of dispatch rather than when advising enroute status.

Each non-contracted dispatch center will maintain a 800 mHz radio in their dispatch center. County Communications will alert non-contracted providers on this frequency or may elect to also utilize radio pagers if a company does not utilize a dispatch center or wishes to have their supervisors notified of system all-calls.

Summary

- Frequency 9 will be used for call alerting only.
- Units not on "radio watch" will receive call notifications via radio pager. A courtesy portable radio ring-down will also be sent on Frequency 91.
- Non-contracted units will be moved into the 800 mHz band.
- Non-contracted units will conduct hospital notifications via cell phone or self-initiated radio-ring down on Frequency 92 (addressed later in this document).

Frequency 91 (800 mHz Band)

Frequency 91 will remain as the primary 911-EMS System dispatch frequency. Data transmissions, incident coordination, and non-essential priority traffic will be moved to other frequencies.

Frequency 92 (800 mHz Band)

Frequency 92 may be used for countywide EMS Command if necessary. However, the primary use for this channel will be unit-initiated hospital ring-downs (for code three and specialty center transports) and radio-button status transmissions. County Communications will not monitor this frequency unless it is being used as a countywide EMS Command channel.

Non-contracted ambulance providers may also use Frequency 92, for hospital ring-downs, when transporting code three or to a specialty center. All units will use cellular phones, for hospital ring-downs, for code two transports. If unit-initiated hospital ring-downs are not possible, all hospital ring-downs will be moved to cellular phones. Dispatcher initiated ring-downs can no longer be supported based on increased radio traffic and the need for greater operational coordination.

Summary

- Frequency 92 will be used for unit-initiated hospital ring-downs and radio-status keeping transmissions.
- Dispatchers will not monitor Frequency 92 unless used for countywide Command.

Frequency 93 (800 mHz Band)

Frequency 93 will continue to be used for GPS data transmission.

Summary

- No changes in the use of this frequency.

Frequency 94 and 95 (examples only) (800 mHz Band)

Frequency 94 and 95 will be used as Command or Tactical channels. One channel will be used for incidents in the Northern portion of the County and the other for the Southern portion. MCI Alerts/Activations/FAA Alerts will be moved immediately to the appropriate Command/Tactical channel. The EMS Duty Chief will determine if a Command channel needs to be managed by a dispatcher on a case-by-case basis. Contractor supervisors may request the use of Command/Tactical channels, on an emergent basis, but may not determine if a dispatcher monitors the channel due to the operational and financial impacts to the County.

These channels may be used as determined by the needs of the incident. For example, Frequency 94 may be used as North Command and Frequency 95 used for North Tactical as necessary. Daily communications between units (fire units to ambulances) may occur on these channels if not assigned for use on an incident. These channels may also be restricted for use on standby assignments, tactical operations, drills, etc. with the advance approval of the EMS Duty Chief in cooperation with County Communications.

Ambulance Strike Teams/Task Force will be assigned to one of these frequencies (not monitored by County Communications) as a travel channel. If a Task Force or Strike Team is used within the County, a combination of frequencies may be used.

Summary

- Frequencies used for Command or Tactical operations, may or may not be monitored by a dispatcher.
- May be used for Ambulance Task Force/Strike Team Coordination.

BAYMACS (800 mHz Band)

BAYMACS will be used for countywide EMS Command coordination with external agencies. The EMS Duty Chief and County Communications shall approve all requests for use that originate from the EMS System.

Summary

- BAYMACS will be used for countywide EMS Command coordination with external agencies.

Table 1: Frequency Utilization

Frequency	Call Sign	Use
91	MED 91	Dispatch Primary
92	COMMAND 92/TAC 95 (if used for other than elective data transmission)	(1) Elective Data Transmission including self-initiated hospital ring-downs and unit status keeping (radio buttons) (2) Discontinue #1 for Countywide Command Use or multiple incident coordination. (3) Suspected/Catastrophic Event Command Coordination – Restrict for use by the EMS Agency, Contractor, and Health Officer. (4) Non-contracted provider "All Call" acknowledgement. Move to COUNTY MED if #1-3 are in effect.
94 (New 800)	COMMAND 93/TAC 96	(1) Used as a Command or Tactical channel based on the needs of the incident in the Northern portions of the County. (2) Strike Team/Task Force Travel Channel
95 (New 800)	COMMAND 94/ TAC 97	Used as a Command or Tactical channel based on the needs of the incident in the Southern portions of the County. (2) Strike Team/Task Force Travel Channel
9	N/A – No Voice	Unit Alerting
BAYMACS	Variable	When authorized, used for countywide incident coordination, at the EMS Command Level, with external agencies.

Dispatch Format (includes clear text and radio codes)

When a tone page is received, the unit shall immediately acknowledge the page on Med 91 (Frequency 91). The crew will state their unit number, advise that they are available on-the-air, and are prepared to copy call information (Med 91; 764, on –the-air, Winchester and Moorpark). Alphanumeric pages are a supplemental source of dispatch information; crews are expected to copy response information at the time of verbal dispatch by County Communications.

In events where 911 EMS System Units and non-EMS System units are used to manage an event, crews shall preface each transmission with name of the company/department followed by the unit ID (Med 91, Bayshore 28, on –the-air, Winchester and Moorpark).

The use of clear text shall replace the majority of radio codes. This change will better match FIREScope and national dispatch guidelines. A limited number of radio codes will remain in use.

Table 2: EMS Radio Terms

Responding	Enroute to a response	Emergency Traffic	Channel is cleared and made available for emergency traffic. (Replaces Code-30)
On-Scene	Arrived at the scene of the call	On Scene - Investigating	On scene of an incident, investigating circumstances. Unit is on-scene.
Transporting	Transporting patient to location	Report on Conditions	Scene size-up, status of an incident.
Available	Ready for response		

Table 3: Approved EMS Radio Codes

10-1	Poor Reception	Code 1	Information – Low Priority
10-2	Good Reception	Code 2	Response without Lights and Siren
10-4	Message Understood	Code 3	Response with Lights and Siren
10-55	Dead Body	Code 4	No Further Assistance Needed
		Code 7	Meal Break

Audible Tones

Upon the radio dispatch of a call, a digital Motorola signal will be sent to the one of the crews portable radios and will be audible upon verbal call dispatch.

A steady alert tone will be used when anytime the dispatcher needs to announce a priority message. This includes will All-Points-Broadcasts (APB's), hospital status, major road closures, etc. The tone may be initiated by County Communications or upon the request of the EMS Duty Chief (ie: request a tone alert for a message to all units/hospitals).

A wobbler-tone will be used when requested by EMS Command staff (supervisors, EMS Duty Chief, etc.), County Communications, or when emergency traffic requires an immediate action such as an evacuation, eminent safety issue, etc.

Marker tones may be used on any restricted frequency including when monitored by a dispatcher. The use of marker tones may be authorized by the EMS Duty Chief in coordination with County Communications.

STARCAR's

STARCAR's will have all EMS Channels programmed into each units mobile radio. Hospital notifications will be managed in the same fashion as all other ambulances (see Frequency 92 use above).

The term "Extended" shall mean a contracted ambulance response, with red lights and siren (RLS), time greater than 18 minutes; "Delayed" shall mean longer than 12 minutes regardless of urbanization classification.

Use of Command/Tactical Channels

Various incidents will automatically be assigned to Command channels. These include FAA Alerts, MVI's, MCI Alerts, MCI Activations, etc. EMS Command staff may request use of these channels at anytime based on resources available to County Communications at the time of the request (factors include other working incidents, dispatcher staffing, system volume considerations, etc.).

Dispatchers, when requested by the EMS Duty Chief, may monitor command channels. Tactical channels are not monitored by County Communications. The use of a tactical channel is for on-scene communications/coordination only.

Command and/or tactical channels may be restricted in advance when approved by the EMS Agency. Examples may include system drills, standby assignments, fire/law cooperative operations, etc. Tactical channels, if not assigned to an incident, may be used by first response agencies for scene coordination with responding ambulances.

When a Command channel is used, units shall notify County Communications of their response on Med-91 and then monitor the assigned Command channel until they are about to arrive on-scene. Prior to arrival, the responding unit shall contact Command and request an assignment. The responding unit must advise County Communications when they arrive on-scene and off-the-scene on Med-91. The unit must also advise Command of on-scene and off-the-scene. Once assigned to a Command channel, units shall not communicate with County Communications directly. The only communication to County Communications shall be from the manager of the Command channel (EMS, Transportation Group/Unit, etc.).

Non-Contracted Ambulances/Services (including air)

Non-contracted ambulance services will either maintain an 800 MHz radio in each dispatch center or use a UHF radio pager. Non-contracted ambulance services may propose radio-monitoring plans to the EMS Agency for approval (based on the use of answering services, field authorization for response vs. dispatch centers, etc.).

Non-contracted ambulance services shall follow radio use procedures as identified in this document.

When a non-contracted ambulance service provider receives a ring-down, the designated company representative shall acknowledge on Command 92. County Communications will direct the units from that point forward.

Each Santa Clara County Permitted Ambulance (including air) must have at least one portable 800 MHz radio programmed to include the frequencies identified in Table 1. The EMS Agency will attempt to procure funds to assist with the migration from UHF to 800 MHz.

Acute Care Hospital Use of Communications System

Each acute care hospital will maintain an 800 MHz base radio. Impending critical or specialty center transports will be announced, by the transporting unit, on Command 92 (800 MHz), all others will be announced via cellular phone. Hospital receiving status will be assessed using EMSsystem. However, if EMSsystem is compromised, a command channel may be used (Command 1, 2, or 3) to query hospital bed status in the event of an MCI, disaster, etc.

County Communications notifications to hospitals (MCI, system alerts, etc.) will be announced on Command 92.

Portable Radios

800 MHz portable radios shall be programmed as provided in Table 1. A DTMF pad must be provided, on either a mobile or portable radio per-unit, to facilitate self-initiated hospital ring-downs.

The Contractors supervisor's and EMS Duty Chief's shall poses a Bendix King radio for each supervisor vehicle or EMS Agency response vehicle, programmed in accordance with the California Statewide Frequency Plan (Groups 1, 2, and 3), by July 1, 2005.

Satellite Phones

The Contractor's supervisors, Contractor's Operations Manager, and EMS Duty Chief's shall poses satellite telephones for use in remote areas of the County and in the event of a radio and/or telephone failure. (See Suspected/Actual Catastrophic Event)

Use of BAYMACS

BAYMACS may be used by EMS Command personnel (EMS Agency Personnel or designee's) for the coordination of multi-jurisdictional, multidisciplinary, incidents with the County. Contractors' personnel may use this frequency when authorized but may not initiate use without the consent of the EMS Duty Chief.

Air Ambulance/Rescue Aircraft Providers

Air Ambulance and/or Rescue Aircraft Providers may utilize Command 92 (800 MHz band) for self-initiated hospital ring-downs when transporting a patient from a 911 response to a Santa Clara County hospital. County Communications will not ring-down hospitals for air providers. Air providers shall identify a redundant communications system in the event of discontinuation of hospital ring down ability.

Interfacility hospital communications are the responsibility of the private air ambulance service. All ring-downs, including self-initiated, may be suspended depending on the needs of the 911 EMS System.

Public Safety Partner Communications

Various fire, law, and public safety personnel may communicate on Command and Tactical Channels as authorized by the EMS Agency and County Communications. This may include incident coordination, requests for resources, etc.

Suspected/Actual Catastrophic Events

In the event of a suspected or actual catastrophic event, the EMS managers identified below shall check-in with and monitor Command 92 for instructions from the EMS Agency.

- Contractor's Operations Manager
- Contractor's Field Supervisors (AMR 121 and AMR 122)
- San Jose EMS Supervisor (Med-30)
- EMS Duty Chiefs (EMS-1 and EMS-2)
- EMS Medical Director (EMS-9)
- EMS Administrator (EMS-8)

If the radio system fails, the EMS Duty Chief shall contact the Contractors Operations Manager via satellite phone.

Under normal circumstances, EMS-1 shall coordinate EMS System Operations in the first hours of a catastrophic event in coordination with the EMS Administrator and other governmental organizations.

EMSystem Use

EMSystem shall be the primary means for field personnel to determine hospital diversion and advisory statuses. As a back-up, County Communications will announce hospital changes via an all-page and APB. Field units are responsible to monitor alphanumeric pagers and radio traffic for hospital status. County Communications will advise units of hospitals "RED" or "YELLOW" status if they attempt to transport to that hospital.

EMSystem shall be gradually implemented as the hospital availability resource, in place of radio communications, for multi-patient situations. Hospital queries are not necessary when hospitals are identified as "GREEN". In such cases, at least two critical and two non-critical patients may be transported to each "GREEN" facility.

Contractor's supervisors and/or the EMS Duty Chief may provide incident updates via EMSystem. This may include, but is not limited to, HAZMAT chemical identification, decontamination used, etc.

Based on EMS System financing, all ambulance service dispatch centers will be provided with EMSystem access. If implemented, County Communications will query ambulance availability via EMSystem rather than via radio communications.

Training and Orientation

The EMS Agency and County Communications will provide an orientation to the enhanced plan for the Contractor's management staff. The Contractor shall be responsible to update all training materials and provide appropriate education to all current and new-hire personnel. The EMS Agency and County Communications shall approve the Contractor's training plan and materials prior to the start of instruction.

The EMS Agency and/or County Communications shall provide training to other users, including acute care hospitals, on the contents of the plan.

Stakeholder Participation

The enhancement plan developed by the EMS Agency and County Communications will be made available for a thirty-day comment and review period by any interested stakeholder group or individual. A notice will be posed on the EMS Agency's website and email notices sent to all BLS and Paramedic Coordinators.

All comments must be received in writing by the established due date. One open hearing will be held no greater than sixty days after the plan is made available to the system for review.

Implementation Timelines (Estimates)

The plan may be implemented in full or part based on system financing, operational considerations, and other internal/external factors.

Review Process

The plan will be made available to all EMS System Stakeholders for review from March 19, 2004 through May 1, 2004. All comments, suggestions, and concerns, must be received, in writing, to the EMS Agency (electronic mail preferred) by May 1st.